

WHAT IS CLAIMED IS:

1. A method for removing hard material layers from hard metal substrates by employing a layer removal solution, comprising:

introducing between a hard metal substrate and a hard material layer, an intermediate carrier layer comprising a material that is differing from the material of the hard material layer and from the metal substrate; and

selectively dissolving the intermediate carrier layer
10 by employing through pores of the hard material layer, a layer removal solution, which, within a treatment time period, dissolves the material of the intermediate carrier layer more than the material of the hard material layer, such that through this selective dissolving of the material
15 of the intermediate carrier layer through the pores of the hard material layer, the hard material layer is removed before it is dissolved as much as the intermediate carrier layer.

2. A method as claimed in claim 1, including introducing
20 a TiN layer as the intermediate carrier layer.

3. A method as claimed in claim 2, wherein the hard material layer comprises a layer of (E_1, E_2, \dots, E_n) X, with

E_x : being an element number n from one of the groups
25 4, 5, 6, 13, 14 of the Periodic Table of Elements of the New IUPAC Notation,

X: being at least one element selected from the group consisting of N, C, and O, and

n: being a running parameter, with $n \geq 1$.

- Sub A17*
4. A method as claimed in claim 3, wherein n = 2.
 5. A method as claimed in claim 2, wherein the layer thickness of the intermediate layer (d_z) is selected to be
5 $0.01 \mu\text{m} \leq d_z \leq 0.5 \mu\text{m}$.
 6. A method as claimed in claim 5, wherein the layer thickness of the intermediate layer (d_z) is selected to be
 $0.01 \mu\text{m} \leq d_z \leq 0.3 \mu\text{m}$.
 7. A method as claimed in claim 5, wherein the layer thickness of the intermediate layer (d_z) is selected to be
10 $0.01 \mu\text{m} \leq d_z \leq 0.2 \mu\text{m}$.
 8. A method as claimed in claim 3, wherein the elements E_x comprise at least one of aluminum, silicon, chromium or boron.
 - 15 9. A method as claimed in claim 2, wherein the hard material layer comprises a CrC, CrN, CrCN or WC-C layer.
 10. A method as claimed in claim 9, wherein the hard material layer is a CrC, CrN, CrCN or WC-C layer.
 11. A method as claimed in claim 2, wherein the hard material layer comprises at least one of a TiAlN or a TiCrN
20 layer.

- Sub b9(1)*
12. A method as claimed in claim 2, wherein the hard material layer comprises a TiAlN layer.
 13. A method as claimed in claim 12, wherein the hard material layer is a TiAlN layer.
 - 5 14. A method as claimed in claim 2, wherein the hard material layer has a thickness of at least 2 μm .
 15. A method as claimed in claim 2, wherein a hydrogen peroxide solution is used as the layer removal solution
 - 10 16. A method as claimed in claim 15, wherein the hydrogen peroxide solution is maximally 50 wt.% hydrogen peroxide.
 17. A method as claimed in claim 15, wherein the hydrogen peroxide solution is maximally 20 wt.% hydrogen peroxide.
 - 15 18. A method as claimed in claim 15, wherein NaOH is included in the solution.
 19. A method as claimed in claim 18, wherein maximally 5.0 wt.% NaHO is in the solution.
 20. A method as claimed in claim 18, wherein maximally 0.5 wt.% NaHO is in the solution.
 - 20 21. A method as claimed in claim 15, wherein at least one of the substances disodium oxalate and KNa tartrate tetrahydrate are included in the solution.

- Sub A1*
22. A method as claimed in claim 21, wherein the at least one of the substances disodium oxalate and KNa tartrate tetrahydrate are included in the solution at maximally 5 wt.%.
- 5 23. A method as claimed in claim 15, wherein the solution consists exclusively of water, hydrogen peroxide, NaHO and at least one of the substances disodium oxalate and KNa tartrate tetrahydrate.

SEARCHED - INDEXED - SERIALIZED - FILED